Gateway GT115
Service Guide

PART NO.:

Preface

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Gateway's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For GATEWAY-AUTHORIZED SERVICE PROVIDERS, your Gateway office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Gateway office to order FRU parts for repair and service of customer machines.

Revision History

Please refer to the table below for the updates made on Gateway GT115 service guide.

Date	Chapter	Updates

Copyright

Disclaimer

Conventions

The following conventions are used in this manual

:

Screen messages	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

Safety, Care and Regulatory Information

Before installing a server, be sure that you understand the following warnings and cautions.

WARNING: To reduce the risk of electric shock or damage to the equipment:

Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.

Unplug the power cord from the power supply to disconnect power to the equipment.

Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

WARNING:To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: Do not operate the server for long periods with the access panel open or removed.

Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device. To

prevent electrostatic damage:

Avoid hand contact by transporting and storing products in static-safe containers.

Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.

Place parts on a grounded surface before removing them from their containers.

Avoid touching pins, leads, or circuitry.

Always be properly grounded when touching a static-sensitive component or assembly.

Server warnings and cautions

Before installing a server, be sure that you understand the following warnings and cautions.

WARNING: To reduce the risk of electric shock or damage to the equipment:

1. Do not disable the power cord grounding plug. The grounding plug is an important safety feature.

2. Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.

3. Unplug the power cord from the power supply to disconnect power to the equipment.

4. Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.

WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

CAUTION: Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Table of Contents

Mechanical Components

Item	Description
1	Right side cover
2	System support retainer
3	System bottom plate
4	System support retainer
5	System plastic stands
6	Hard drive cage
7	Hard drive bracket
8	Front door plate
9	Front bezel
10	Power button
11	Bezel lens
12	Power lens

13	Optical drive cage
14	USB bracket
15	USB bracket
16	Left side cover
17	Hard drive slider
18	Hard drive cage
19	Top cover
20	System top cover
21	CD-ROM bracket patch
22	PCI retainer
23	Back cover
24	Rear window

System FRU List

Item	Photo	Part number
Chassis		HS.31600.004
SATA ODD CABLE 7 PINS, 500MM		CA.R4300.001
SATA HDD CABLE 7 PINS, 500MM		CA.R4300.002
SAS HDD CABLE		CA.31400.030

Back I/O SHIELD		33.R7F0L.001
FRONT BEZEL ASSEMBLY		TZ.R4300.001
SYSTEM FAN		HI.R4300.001
SYSTEM FAN SINK		HI.30900.024

Main Board		MB.R7F0A.001
FSP FSP450-60EP 450W POWER SUPPLY		PY.45008.001
Mylar		47.R7F0L.001

System components
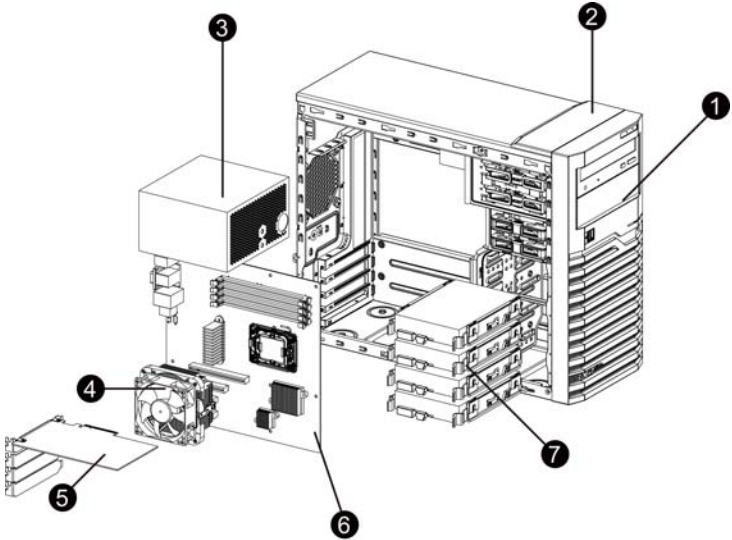
Item	Description
1	Front Bezel door
2	Top cover
3	Power supply cage
4	Cooling fan cage
5	PCI card
6	Main board
7	Hard drive blank

System Specifications

Hardware specification
System unit

Item	Description
Processor socket	AMD socket C32
Processor support	● Memory Technology – Socket C32 interfaces to DDR3 SDRAM DIMMs. ● HyperTransport™ Technology. ● Thermal Monitoring and Control – The Socket C32 processor uses Advanced Platform Management Link.
Core logic chipsets	● AMD SR5670 – North bridge ● AMD SP5100 – South bridge
LAN controller	INTEL 82574L
Memory controller	Integrated in AMD socket C32 processor.
Storage controller	Software RAID – Integrated in AMD SP5100.
VGA controller	XGI Volari – Z9S with 64 MB VRAM.
I/O subsystem	● PCI-E 1 – PCI Express x16 line with x16 slot. ● PCI-E 2 – PCI Express x8 line with x8 slot. ● PCI-E 3 – PCI Express x4 line with x4 slot. ● PCI-E 4 – PCI Express x1 line with x4 slot.
Memory	● Four DDR3 (1066/1333 MHz) slots. ● Support maximum 64GB at 800MHz.
I/O ports	● Front panel – Two USB ports. ● Rear panel – PS/2 keyboard port, PS/2 mouse port, COM port, Four USB ports, Video Port, Audio jack (Option), LAN port. ● Internal – Two USB ports for tape device, USB port, I2C Connector, TPM, Six SATA ports.
Status LED indicators	● Front panel – Power, Hard drive, System Status and LAN activity. ● Rear panel – Activity and link status for the LAN ports.
Thermal solution	● One system fan. ● One processor heat sink fan. ● One front panel fan.

Memory

Item	Description
Number of DIMM slots	Four
Maximum memory capacity	8 GB (2 GB in each of the four DIMM slots)
Memory modes	• Single DIMM, non-interleaving (DIMM A1) • Two DIMMs, interleaving (DIMM A1 and DIMM B1) • Four DIMMs, full memory configuration
Memory controller	Integrated in the AMD socket C32 processor
DIMM specifications	
Size	512 MB, 1 GB, 2GB, and 4 GB
Speed	1066/1333 MHz
Type	DDR3 Unbuffered ECC DIMM

Processor
General processor specifications

Item	Description
Manufacturing technology	• 45nm • 65nm
Thermal design power	95W
Socket type	C32

Environmental specification

Item	Description
Temperature range Operating Non-operating	 5 – 35°C (41 – 95°F) -20 – 60C (-4 – 140°F)
Humidity (non-condensing) Operating Non-operating	 30–80% RH 20–90% RH
Acoustic noise Full Configuration Light Configuration	 Sound pressure level in idle mode on bystander position < 38 dBA Sound pressure level in full loading on bystander position < 45 dBA Sound pressure level in idel mode on bystander position < 35 dBA Sound pressure level in full loading on bystander position < 40 dBA

* All temperature ratings shown are for sea level. An altitude derating of 1¢XC per 300 m (1.8¢XF per 1,000 ft) to 3048 m (10,000 ft) is applicable. No direct sunlight allowed.

** Storage maximum humidity of 95% is based on a maximum temperature of 45¢XC (113¢XF). Altitude maximum for storage corresponds to a pressure minimum of 70 KPa.

Mechanical specification

Item	Description
System board platform	uATX (Micro Advanced Technology Extended)
System board dimensions	
Length	304.8mm
Width	243.84mm
System Dimensions	
Height	358mm
Depth	180mm
Width	450mm
Server weight (maximum configuration, approximate)	
Basic configuration (excluding the keyboard and mouse)	8KG
Fully loaded configuration (including the keyboard, mouse, and kits)	12.2KG

Power supply specification

GT115 supports 300-watts and 450W power supply modules. You have the option to install a 300-watts power supply module or 450W power supply module.

Note: If you need to install three hard disk drives, please use 300W power supply (with three connectors). If you need to install four hard disk drives, please use 450W power supply (with four connectors).

Item	Description
Model	FSP300-60EP(1)
Type	300W
Dimensions	
Height	86 mm (3.38 in.)
Depth	140 mm (5.5 in.)
Width	150 mm (5.9 in.)
Weight (approximate)	1.28 kg (2.82 lb)
Input requirements	
Rated input voltage	100–127 VAC, 220–240 VAC
Normal line voltage	115 VAC, 230 VAC
Line frequency	47–63 Hz
Rated input current	Load 7A at 100–127 VAC, 3.5A at 220-240 VAC
Inrush current	No damage
Power supply output power	
Rated steady state power	300W
Maximum peak power	300W
Operating conditions	
Temperature	5–50 ℃ (41–122°F)
Humidity (non-condensing)	5–95% at +55 ℃

Item	Description
Model	FSP450-60EP
Type	450W
Dimensions	
Height	86 mm (3.38 in.)

Depth	140 mm (5.5 in.)
Width	150 mm (5.9 in.)
Weight (approximate)	1.43 kg (3.1 lb)
Input requirements	
Rated input voltage	100–127 VAC, 220–240 VAC
Normal line voltage	115 VAC, 230 VAC
Line frequency	47–63 Hz
Rated input current	Load 8A at 100–127 VAC, 4A at 220-240 VAC
Inrush current	No damage
Power supply output power	
Rated steady state power	450W
Maximum peak power	450W
Operating conditions	
Temperature	5–50 C (41–122°F)
Humidity (non-condensing)	5–95% at +55 C

Appearance of System

Front view
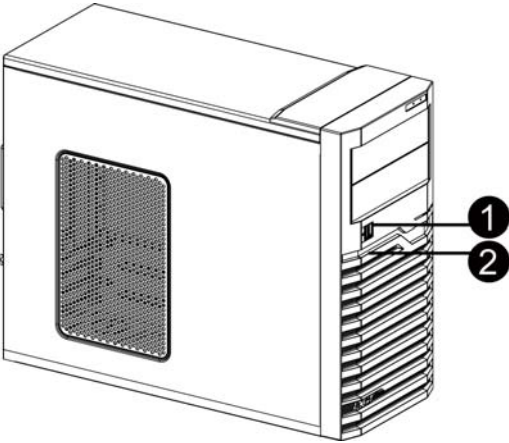
Item	Component
1	USB connectors
2	LED indicator panel

Rear view
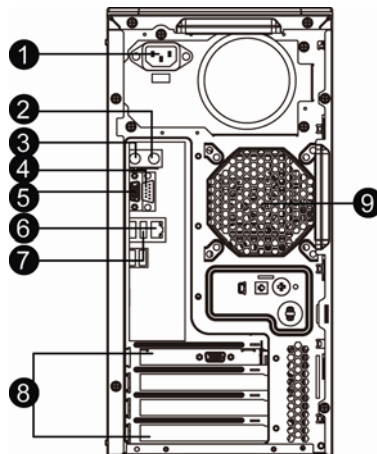
Item	Icon	Component	Description
1		Power supply module cord socket	Connect the system power cord here.
2		PS/2 mouse port	Connects to a PS/2 mouse.
3		PS/2 keyboard	Connects to a PS/2 keyboard.
4		Serial port	Connects to serial devices.
5		Monitor port	Connects to monitors.
6		Gigabit LAN ports 1/2	Connects to an Internet or intranet network.
7		USB 2.0 ports	Connects to USB devices.
8		PCI slot covers	Protects to an Internet or intranet network.
9		System fan	Regulates the system airflow.

Internal Component
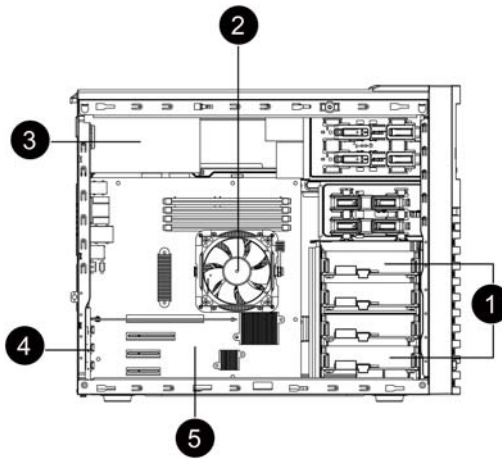
Item	LED indicator
1	Release sliders for the HDD cages.
2	Cooing fan assemblies.
3	Power module bay
3	Cooing fan assemblies
4	PCI slot lock levers
5	Mainboard

Switch and LED Indicators Introduction

This section discusses the different LED indicators located on the :

- Front panel
- Hot-plug HDD carrier
- LAN port

Knowing what each LED indicator signifies can aid in problem diagnosis and troubleshooting.

Front Panel LED Description
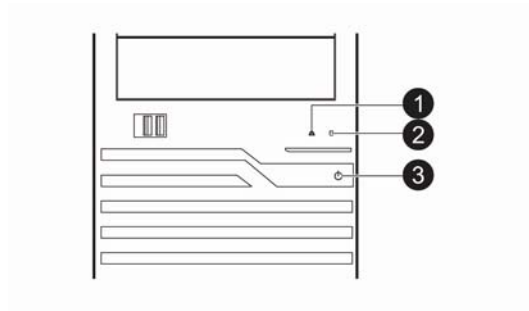
Number	LED	Color	Status	Description
1	LAN Activity	Green	Solid on	Link between system and network or no access
		Green	Blink	Network access
		--	Off	Disconnect/Idle
2	HDD Activity	Green	Blink	HDD access
		--	Off	No HDD access
3	Power	Green	Solid On	System is powered on.

Hard Disk Drive Sequence & LED Description

A drive activity LED indicator is mounted on the hot-plug HDD carrier. The table below lists the possible drive states.

Status	Green	Amber	Description
HDD access	Blinking	--	Ongoing hot-plug HDD activity
HDD failure	--	On	Hot-plug HDD failure
HDD rebuild	Flashing	green/amber	HDD is rebuilding data

LAN Port LED Description
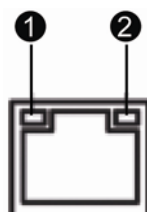
Indicator	Color	Status	Description

1. Network speed (top)	Amber	On	GbE link network access
	Green	On	100 Mbps link network access
		Off	10 Mbps link network access
2. Network connection (bottom)	Green	On	Active network link
	Green	Blinking	Ongoing network data activity
		Off	Off-line network

System Block Diagram

AMD Socket

Channel A
2 DDR3 UDIMMs / RDIMMs

Channel B
2 DDR3 UDIMMs / RDIMMs

PCI-E x 16 Slot1

PCI-E x 8 Slot2

PCI-E x 4 Slot3

PCI-E x 1Slot4

AMD NB: SR5670

Intel® 82574L

USB Port x 9

XGI-Z9S
(64MB DDR2)

Flash SPI
BIOS

AMD SB: SP5100

SATA Port x 6

Audio (Option)

TPM (Option)

SIO
IT8720

Series Port x2
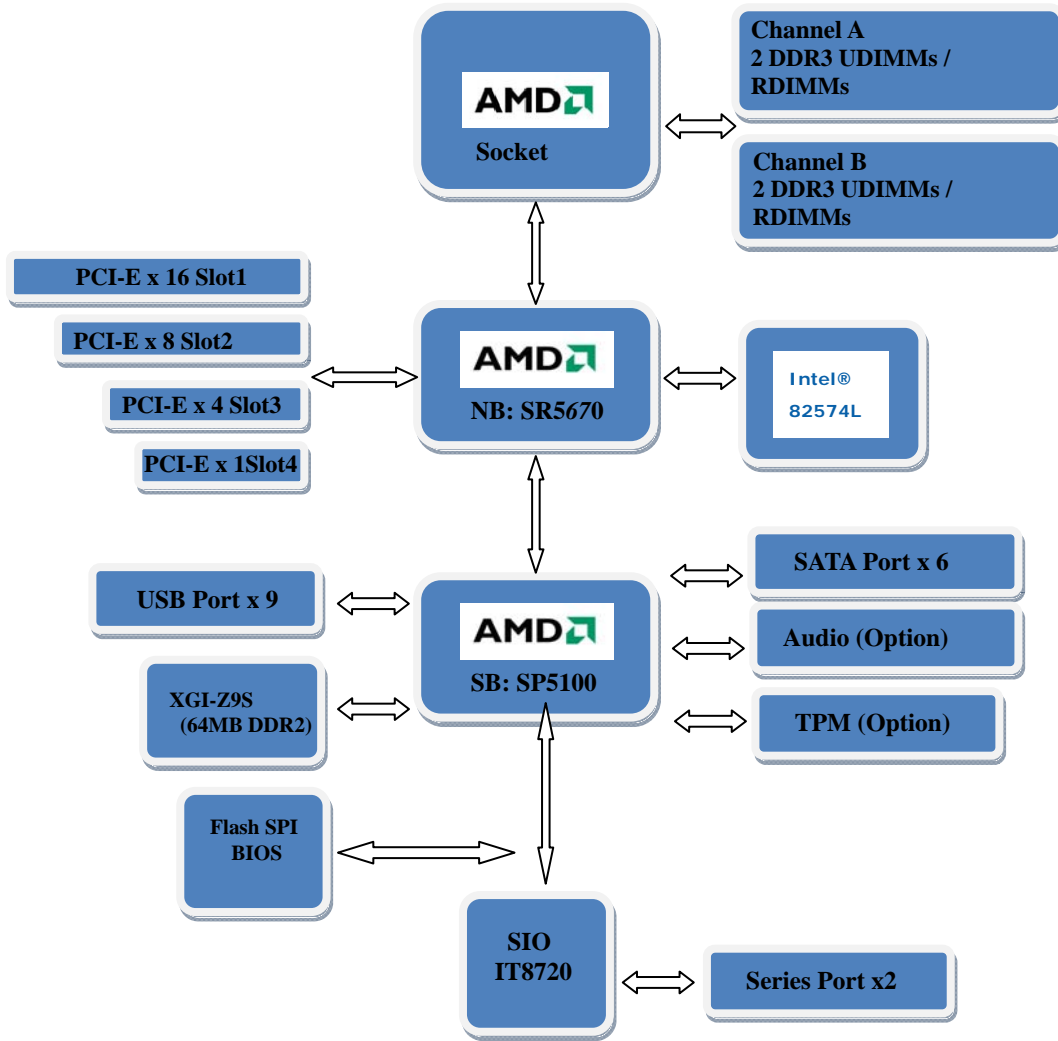
Motherboard Placement and Jumper Setting

Motherboard Component

This section provides general information on changing jumper settings as well as specific jumper configuration for individual boards in the system.

Connector Icon Description
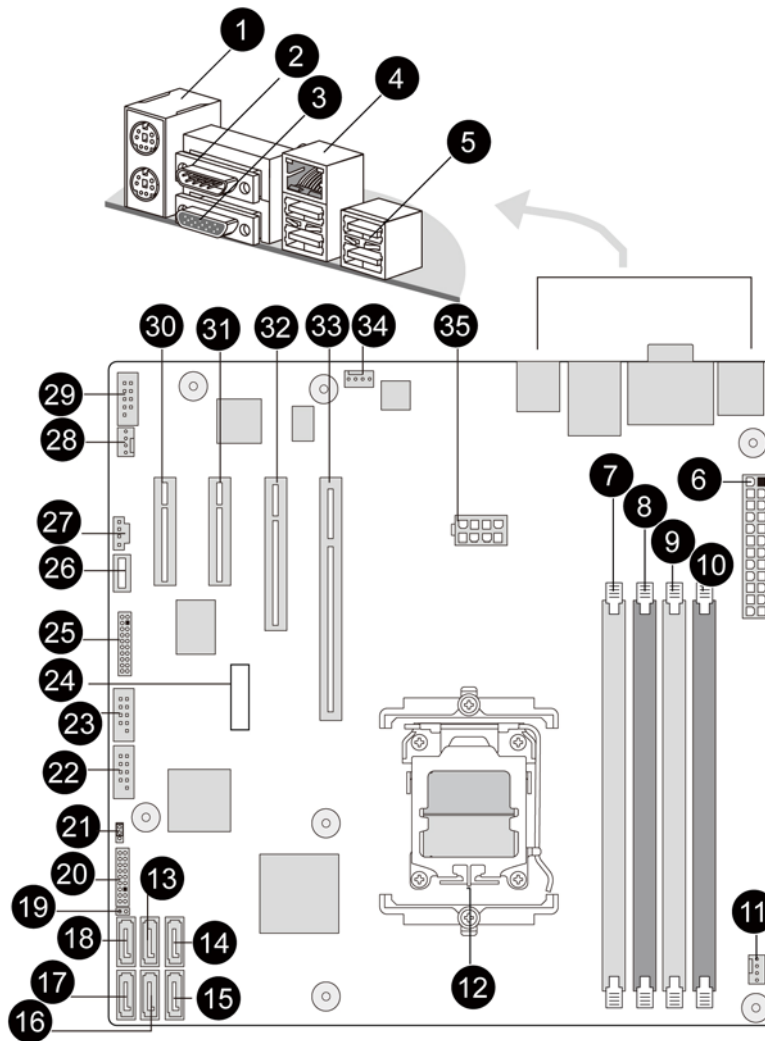
Item	Code	Description	Item	Code	Description
1	PS/2 ports	Connect to mouse and keyboard.	2	Serial port	Connect to serial devices.
3	VGA port	Connect to monitors.	4	RJ45/USB ports	The RJ45 port connects to an internet or intranet network. The USB ports connect to USB devices.
5	USB ports	Connect to USB devices.	6	ATX1	12-pin ATX power connector
7	DIMM_2B	DIMM slot	8	DIMM_2A	DIMM slot
9	DIMM_1B	DIMM slot	10	DIMM_1A	DIMM slot
11	CPU_FAN1	CPU fan cable connector	12	CPU	Processor socket
13	SATA4	SATA cable connector	14	SATA6	SATA cable connector
15	SATA5	SATA cable connector	16	SATA3	SATA cable connector
17	SATA1	SATA cable connector	18	SATA2	SATA cable connector
19	CASE_OPEN2	Case open intrusion	20	F_Panel	Front panel connector
21	CLR_CMOS1	Clear CMOS jumper	22	F_USB2	Front USB2 cable connector
23	F_USB1	Front USB1 cable connector	24	BAT1	CMOS battery
25	TPM1	TPM connector	26	USB_A1	USB type A connector
27	SMBUS_CONN	SMBus connector	28	FRONT_FAN1	System fan cable connector
29	COM2	Serial port connector	30	PCI-E_4	PCI-E x4 slot (x1 signal)
31	PCI-E_3	PCI-E x4 slot (x4 signal)	32	PCI-E_2	PCI-E x8 slot (x8 signal)
33	PCI-E_1	PCI-E x16 slot (x16 signal)	34	REAR_FAN1	System fan cable connector
35	ATX_CPU1	8-pin ATX power connector			

Motherboard Jumper Setting
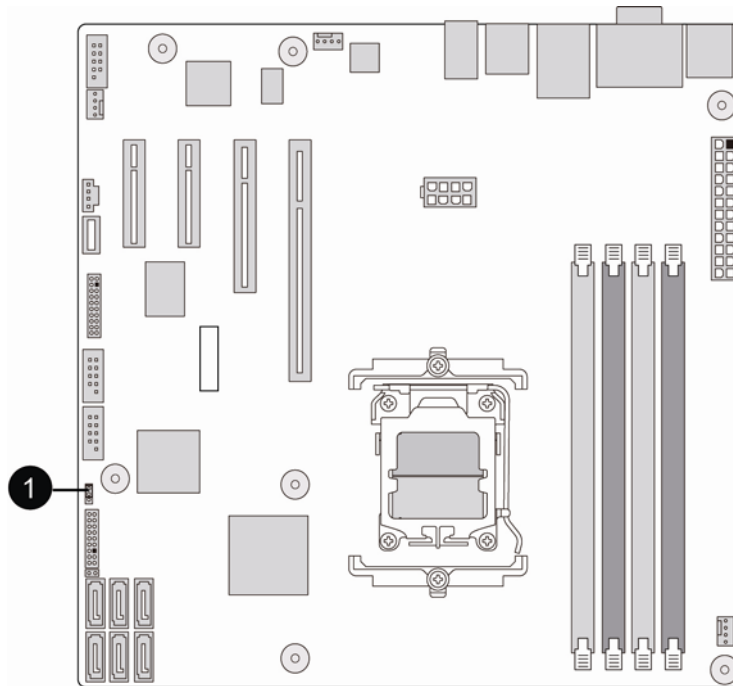
Item	Description
1	**Clear CMOS jumper** (CLR_CMOS1) 1-2 Close: Normal operation. (Default) 2-3 Close: Clear CMOS data.

Installing/Removing system Hardware

This chapter contains step-by-step procedures on how to disassemble the server system for maintenance and troubleshooting.

To disassemble the Gateway GT115 Server, please pay attention to each section's instruction and tools needed.

NOTE: The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

Chassis Cover Removal and Installation

Removing the side cover

1. Remove the two screws located on the rear edge of the side panel.
2. Press the side panel release button and slide the side panel toward the rear of the chassis to disengage it.
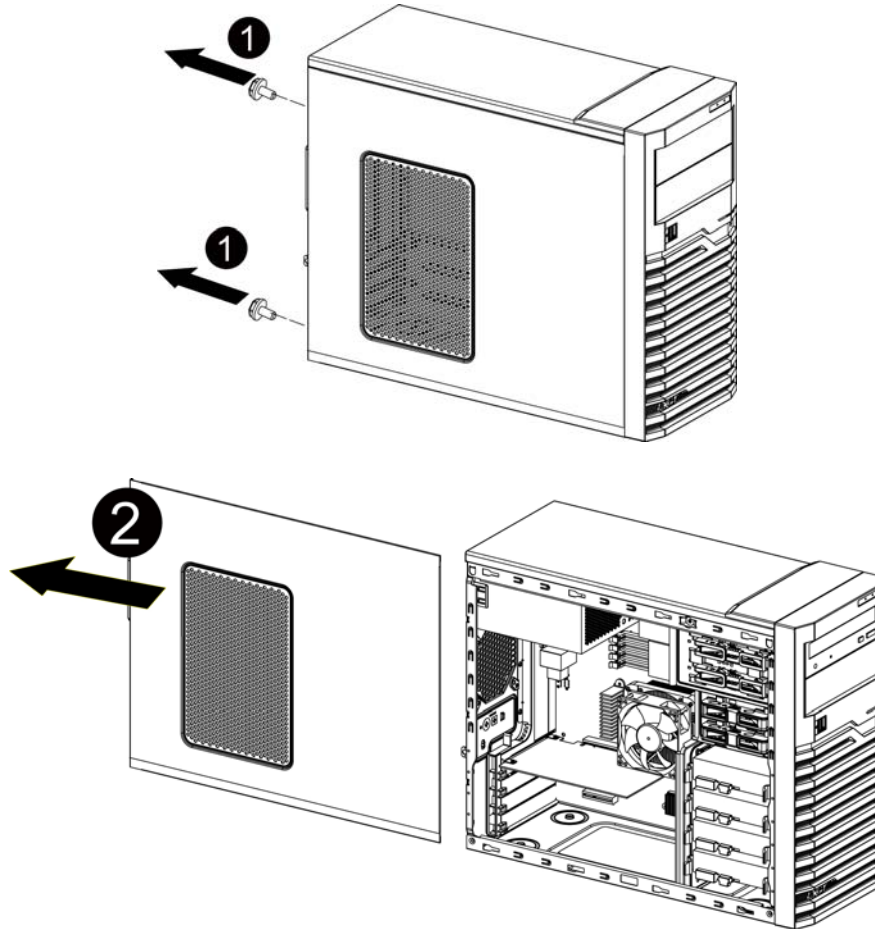
Removing the tower foot

1. Release the bezel door retention tabs from the chassis interior.
2. Pull the bezel away from the chassis.

CPU Installation / Removal

The mainboard supports one C32 processor socket with Dual/Four/Six-Core AMD Opteron™ 4100 series. You have the option to upgrade the default processor.

Observe the following guidelines when replacing a processor.

- Before removing a processor, make sure to back up all important system files.
- Handle the processor and the HSF assembly carefully. Damage to either may prevent the system from functioning properly.

NOTE: A long-nosed screwdriver is needed to remove/install the HSF assembly.

1. Release then lift up the load lever.
2. Open the retention plate to expose the socket body.
3. Insert the CPU with the correct orientation.
4. Close the retention plate and close the lever to the locked position.
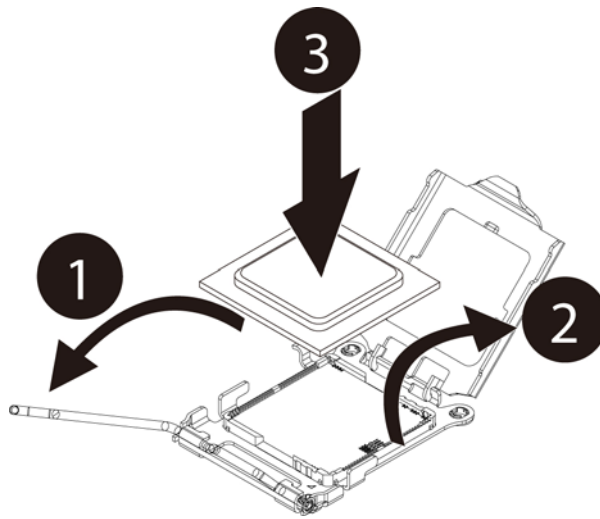
Cooling Fan Installation / Removal

1. Disconnect the processor cooling fan cable from mainboard.

2. Use a long-nosed screwdriver to loosen the four cooling fan mounting pins.

3. Lift the cooling fan away from the mainboard.

4. Lay down the cooling fan in an upright position - with the thermal patch facing upward. Do not let the thermal patch touch the work surface.
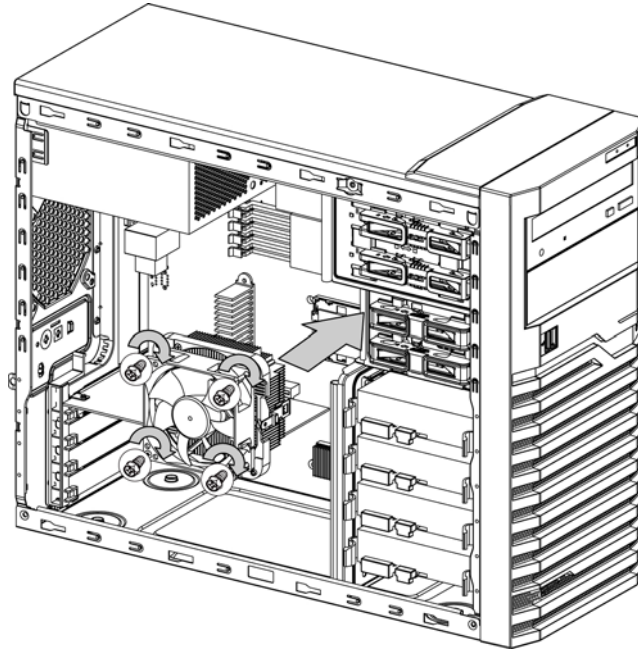
Memory Installation / Removal

The motherboard supports DDR3 memory modules, whereby BIOS will automatically detect memory capacity and specifications. Memory modules are designed so that they can be inserted only in one direction. The memory capacity used can differ with each slot.

Installation step:
1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.
2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.

NOTE!   DIMM must be populated in order starting from DIMMA1/B1 socket. For dual-channel operation, DIMMs must be installed in matched pairs.

3. Reverse the installation steps when you wish to remove the DIMM module.
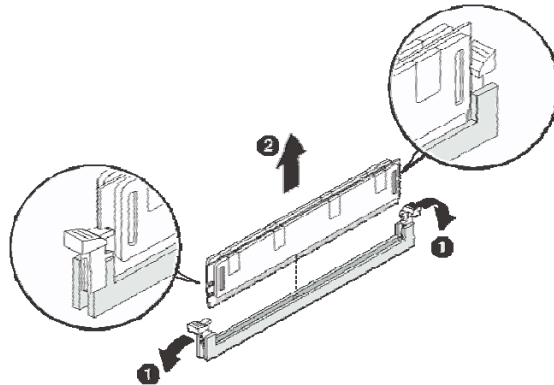
Memory Suggest Population Table:

Interleave mode	Channel A		Channel B		Total Memory
	DIMM_1A	DIMM_2A	DIMM_1B	DIMM_2B	
Single channel	1 GB				1 G
	2 GB				2 G
Dual channel	1 GB		1 GB		2 G
	2 GB		2 GB		4 G
	1 GB	1 GB	1 GB	1 GB	4 G
	2 GB	2 GB	2 GB	2 GB	8 G

Interleave mode	Channel A		Channel B		Total Memory
	DIMM_1A	DIMM_2A	DIMM_1B	DIMM_2B	
Single channel		1 GB			1 G
		2 GB			2 G
Dual channel	1 GB		1 GB		2 G
	2 GB		2 GB		4 G
	1 GB	1 GB	1 GB	1 GB	4 G
	2 GB	2 GB	2 GB	2 GB	8 G

PCI Expansion Card Installation / Removal

Gateway GT115 has four bus slots with of three separate bus segments:

- PCI-E_1 -- PCI Express x16 slots
- PCI-E_2 -- PCI Express x8 slot
- PCI-E_3 -- PCI Express x4 slot
- PCI-E_4 -- PCI Express x4 slot with x1 signal

Install the expansion card

1. Press the release latch of the slot cover opposite the selected expansion slot.
2. Pull out the slot cover and store it for reassembly later.

NOTE: Do not discard the slot cover. If the expansion card is removed in the future, the slot cover must be reinstalled to maintain proper system cooling.

NOTE: Remove the expansion card from its protective packaging, handling it by the edges.

3. Insert the card into the selected slot. Make sure that the card is properly seated.
4. Press the release latch to secure the card in place.
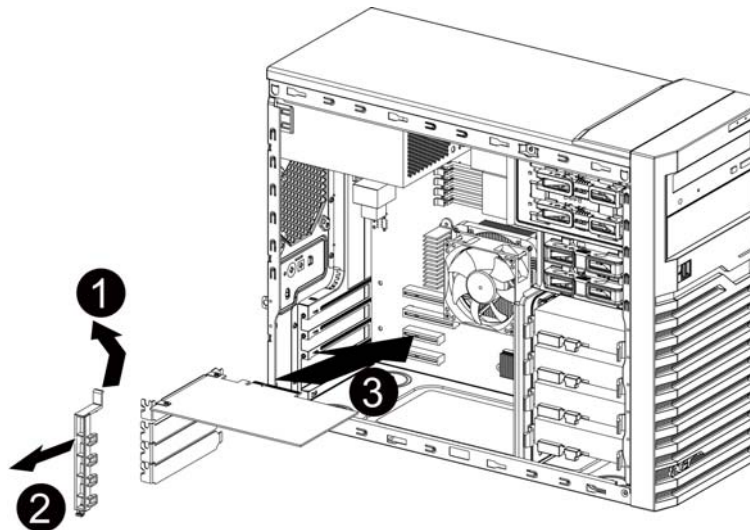
5. Connect the necessary cables to the expansion card as required.

Hard Disk Drive Installation / Removal

Below is the instruction of HDD installation and removal SOP.

1. Open the side cover.
2. Press the release button and pull the blank out of the drive bay.
3. Slide hard disk into blank.
4. Make sure the HDD is seated securely in the HDD blank.
5. Connect the necessary power cable. To connect power cable. Firstly, remove the HDD carrier.

Note!!   Make sure that the drive is properly inserted before pushing the handle back until it clicks into Place.
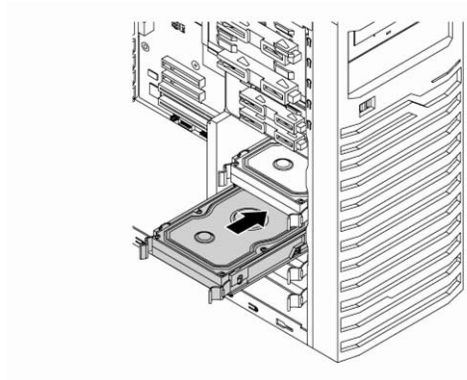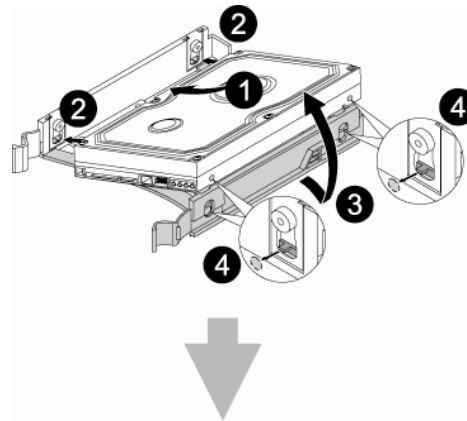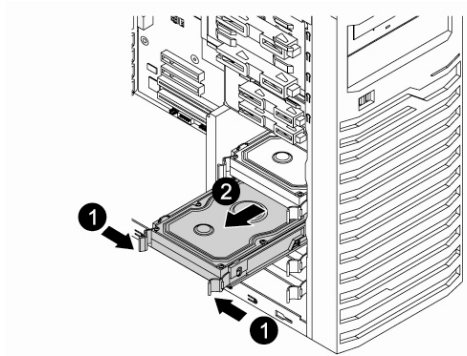
Power supply installation / Removal

The GT115 supports 300 watts and 450 watts power supply modules. The system ships out with only one power supply module installed.

Install a hot-swap power supply module

1. Remove the four securing screws from the back of system.

2. Slide toward and lift to remove the power supply module from the system.
3. To install a new power supply module, please reverse the installation step 1and 2.
4. After replacing a power supply module, connect the necessary cables.
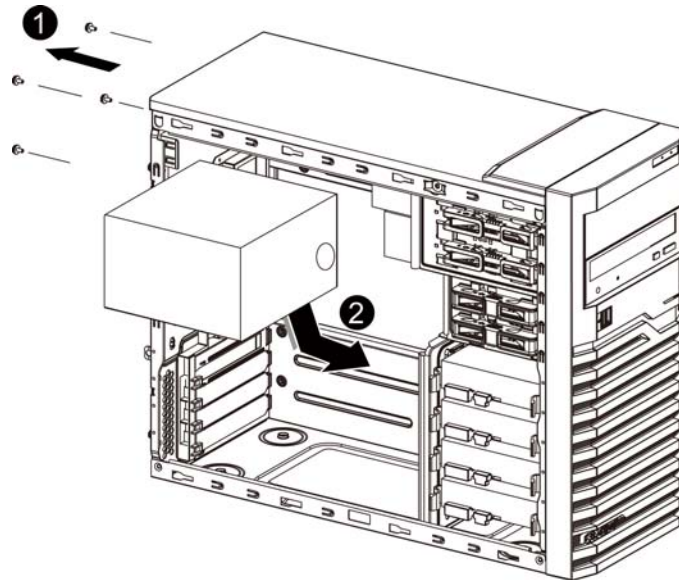
Cable Routing

Cable Routing image
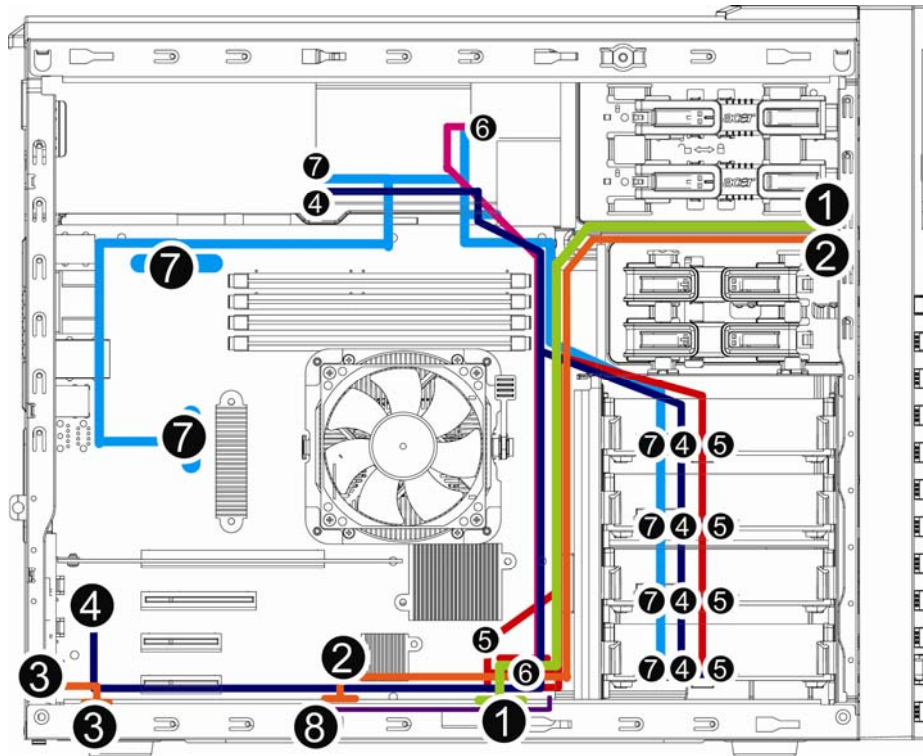
Item	Suggest Cable	Item	Suggest Cable
1	Front switch cable	2	Front USB cable
3	Serial port cable	4	Mini SAS cable
5	SATA cable (onboard SATA to HDD)	6	SATA cable (onboard SATA to ODD)
7	Power cable	8	Case open intrusion

BIOS Setup

System BIOS

BIOS setup is a hardware configuration program built into the system's Basic Input/Output System (BIOS). Since most systems are already properly configured and optimized, there is no need to run this utility. You will need to run this utility under the following conditions.

- When changing the system configuration settings
- When redefining the communication ports to prevent any conflicts
- When modifying the power management configuration
- When changing the password or making other changes to the security setup
- When a configuration error is detected by the system and you are prompted ("Run Setup" message) to make changes to the BIOS setup

NOTE: If you repeatedly receive Run Setup messages, the battery may be bad. In this case, the system cannot retain configuration values in CMOS. Ask qualified technician for assistance.

BIOS setup loads the configuration values in a battery-backed nonvolatile memory called CMOS RAM. This memory area is not part of the system RAM which allows configuration data to be retained when power is turned off.

Before you run the Phoenix BIOS Setup Utility, make sure that you have saved all open files. The system reboots immediately after you close the Setup.

NOTE: Phoenix BIOS Setup Utility will be simply referred to as "Setup" or "Setup utility" in this guide.

NOTE: The screenshots used in this guide display default system values. These values may not be the same those found in your system.

Entering BIOS Setup

1. Turn on the server and the monitor.

   If the server is already turned on, close all open applications, then restart the server.

2. During POST, press **F2**

   If you fail to press **F2** before POST is completed, you will need to restart the server. The Setup Main menu will be displayed showing the Setup's menu bar. Use the left and right arrow keys to move between selections on the menu bar.

BIOS Setup Primary Menus

The tabs on the Setup menu bar correspond to the six primary BIOS Setup menu, namely:

- Main
- Advanced
- Security
- Server Management
- Boot Option
- Boot Manager
- Exit

In the descriptive table following each of the menu screenshots, settings in **boldface** are the default and suggested settings.

BIOS Setup Navigation Keys

Use the following keys to move around the Setup utility.

- **Left** and **Right** arrow keys - Move between selections on the menu bar.
- **Up** and **Down** arrow keys - Move the cursor to the field you want.
- **PgUp** and **PgDn** keys - Move the cursor to the previous and next page of a multiple page menu.
- **Home** - Move the cursor to the first page of a multiple page menu.
- **End** - Move the cursor the last page of a multiple page menu.
- **+** and **-** keys - Select a value for the currently selected field (only if it is user-configuration). Press these keys repeatedly to display each possible, or the **Enter** key to choose from a pop-up menu.

  NOTE: Grayed-out fields are not user-configurable.

- **Enter** key - Display a submenu screen.

  NOTE: Availability of submenu screen is indicated by a (>)

- **Esc** - If you press this key:
  - q On one of the primary menu screens, the Exit menu displays.
  - q On a submenu screen, the previous screen displays.
  - q When you are making selections from a pop-up menu, closes the pop-up without making a selection.
- **F1** - Display the BIOS setup General Help panel.
- **F9** - Press to load default system values.
- **F10** - Save changes made the Setup and close the utility.

Main Menu
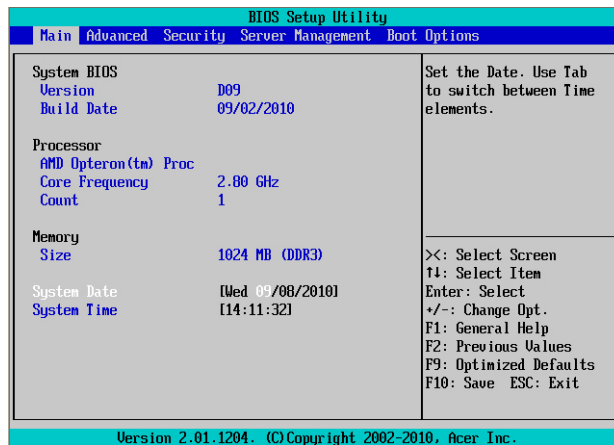
Parameter	Description
BIOS Version	Version number of the BIOS setup utility.
BIOS Build Date	Date when the BIOS setup utility was created.
Processor CPU Type CPU Core Frequency CPU Count	Technical specifications for the installed processor.
System Time	Set the system time following the hour-minute- second format.
System Date	Set the date following the weekday-month-day- year format.

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Advanced Menu

The Advanced menu display submenu options for configuring the function of various hardware components. Select a submenu item, then press Enter to access the related submenu screen.
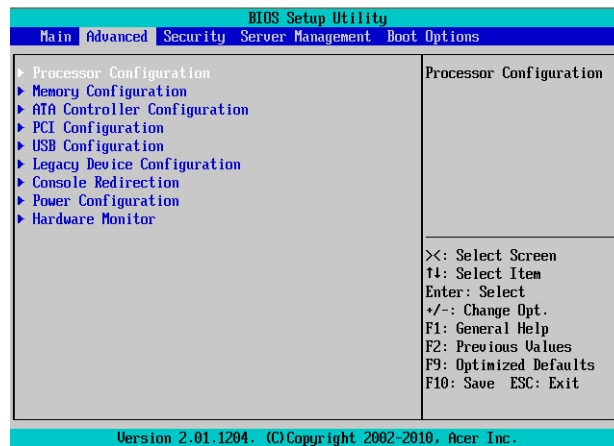
Processor Configuration

```
                         BIOS Setup Utility
         Advanced

 AMD PowerNow           [Enabled]        Support AMD PowerNow.
 MT C1E                 [Enabled]
 Core Leveling Mode     [Automatic mode]
 SVM                    [Enabled]

 Socket0: AMD Opteron(tm) Processor 4184
 6 Cores Running @ 2824 MHz  1175 mV
 Max Speed:2800 MHZ     Intended Speed:2800 MHZ
 Microcode Patch Level: 10000c4
 CPUID : 100f81
 CPU Stepping : 1                        ><: Select Screen
                                         ↑↓: Select Item
 --------- Cache per Core ---------      Enter: Select
 L1 Instruction Cache: 64 KB/2-way       +/-: Change Opt.
        L1 Data Cache: 64 KB/2-way       F1: General Help
             L2 Cache: 512 KB/16-way     F2: Previous Values
  Total L3 Cache per Socket: 6 MB/48-way_ F9: Optimized Defaults
                                         F10: Save  ESC: Exit

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```

Parameter	Description	Option
AMD PowerNow	This feature will increase the system battery life, while delivering performance on demand. It also allows the processor to dissipate less heat under normal operating conditions, providing a cooler and quieter-running system.	Enabled Disabled
MT C1E	Enable this feature will let your system utilize the AMD specific ACPI states to save power consumption.	Enabled Disabled
Core Leveling Mode	Select the core level mode in the system	Automatic mode One core per processor Two cores per processor Three cores per processor
SVM	Select whether to enable the AMD virtualization function. VT allows a single platform to run multiple operating systems in independent partitions.	Enabled Disabled
BIST Error Halt	With this feature enabled, if any BIST errors are detected, the POST will stop, display errors, and wait for user to press F1 to continue POST.	Enabled Disabled
Socket 0	Displays the type of installed processor information.	
Quad Core Running	Displays the Quad-Core running speed.	
CPU Speed	The processor speed is the speed at which a microprocessor executes instructions. Clock speeds are expressed in megahertz (MHz), with 1 MHz being equal to 1 million cycles per second. The faster the clock, the more instructions the CPU can execute per second.	
Max Speed	The Max speed is the speed indicates how fast the data bits travels in the system bus.	
Intended Speed	The Intended speed is the speed indicates the expected speed that the data bits travels in the system bus.	

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Microcode Patch Level	Processor Microcode Patch Level.	
CPUID	Processor ID number.	
CPU Stepping	Processor stepping information.	
Processor L1 Instruction Cache	Processor first-level instruction cache size detected during POST. An Instruction: to speed up executable instruction fetch.	
Processor L1 Data Cache	Processor first-level data cache size detected during POST. A Data Cache: to speed up data fetch and store.	
Processor L2 Cache	Processor second-level cache size detected during POST.	
Total L3 Cache per Socket	Processor third-level cache size detected during POST.	

Memory Configuration

```
                        BIOS Setup Utility
        Advanced

  Available Memory       1024 MB (DDR3)          Enable this feature
                                                 will reserve one rank
  On-line Spare DIMM     [Disabled]              of one logical DIMM to
  Channel interleaving   [Enabled]               be used as a spare
  Chip Select interleav  [Enabled]               rank. This rank will be
  Memory Reset           [No]                    used when any other
                                                 rank no longer
  DIMM Information                               functions properly.
  DIMM_1A                1024MB, 1066MHz
  DIMM_1B                Not Install
  DIMM_2A                Not Install            ><: Select Screen
  DIMM_2B                Not Install_           ↑↓: Select Item
                                                Enter: Select
                                                +/-: Change Opt.
                                                F1: General Help
                                                F2: Previous Values
                                                F9: Optimized Defaults
                                                F10: Save  ESC: Exit


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```

Parameter	Description	Option
Available Memory	Total size of system memory detected during POST	
On-line Spare DIMM	Enable this feature will reserve one rank of one logical DIMM to be used as spare rank. This rank will be used when any other rank no longer functions properly.	Enabled Disabled
Channel interleaving	This feature provides compensating the relatively slow speed of DRAM. The CPU can access alternative sections immediately without waiting for memory to be cached. Multiple memory banks take turns supplying data.	Enabled Disabled
Chip Select interleave		Enabled Disabled
Memory Retest	Select whether to delete the historical memory data log. System memory will be retested on the next boot-up.	Yes No
DIMM Group #1A/1B/2A/2B Status	The size of memory installed on each of the DDR3 slots.	

SATA Controller Configuration

BIOS Setup Utility

Advanced

```
Onboard SATA Controll    [Enabled]
OnChip SATA Type         [AHCI]

SATA Port0               Not Installed
SATA Port1               Not Installed
SATA Port2               Not Installed
SATA Port3               Not Installed
SATA Port4               Not Installed
SATA Port5               Not Installed
```

```
><: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F2: Previous Values
F9: Optimized Defaults
F10: Save  ESC: Exit
```

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Parameter	Description	Option
Onboard SATA Controll	When enabled, the SATA controller will function normally.	Enabled Disabled
OnChip SATA Type	Select the on chip SATA type. IDE: When set to IDE, the SATA controller disables its RAID and AHCI functions and runs in the IDE emulation mode. This is not allowed to access RAID setup utility. RAID: When set to RAID, the SATA controller enables both its RAID and AHCI functions. You will be allows access the RAID setup utility at boot time. ACHI: When set to AHCI, the SATA controller enables its AHCI functionality. Then the RAID function is disabled and cannot be access the RAID setup utility at boot time.	IDE RAID ACHI
SATA Port 0/1/2/3/4/5	Displays the installed HDD devices.	

PCI Configuration

```
                          BIOS Setup Utility
          Advanced

                                             PCI Express Slot 1
                                             Option ROM control
    PCI Express Slot 1 I/     [Enabled]
    PCI Express Slot 2 I/     [Enabled]
    PCI Express Slot 3 I/     [Enabled]
    PCI Express Slot 4 I/     [Enabled]

    Onboard Graphics Cont     [Enabled]
    Primary Video Device      [Onboard Video]

    Onboard LAN Controlle     [Enabled]
    Onboard LAN I/O ROM       [Disabled]          ><: Select Screen
                                                  ↑↓: Select Item
    PCI ROM Priority          [Legacy ROM]        Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F9: Optimized Defaults
                                                  F10: Save  ESC: Exit

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```

Parameter	Description	Option
PCI Express Slot 1/2/3/4	When enabled, This setting will initialize the device expansion ROM for the related PCI-E slot.	Enabled Disabled
Onboard Graphics Cont	When enabled, the graphic controller will function normally.	Enabled Disabled
Primary Video Device	Select the primary video device that that the BIOS will use for output.	Onboard Video PCIe slot Video
Onboard LAN Controller	When enabled, the system will enable the onboard LAN devices.	Enabled Disabled
Onboard LAN I/O ROM	Select whether to enable the selected onboard LAN device. When enabled, device expansion ROM will be initialized.	Enabled Disabled
PCI ROM Priority	In case of multiple Option ROMs (Legacy and EFI Compatible) specifies what PCI option ROM to launch.	Legacy ROM EFI Compatible

USB Configuration

```
                          BIOS Setup Utility
        Advanced

 Detected USB Devices                       USB Controller Enable /
       None                                 Disable

 USB Controller          [Enabled]
  Legacy USB Support     [Enabled]
  Port 60/64 Emulation   [Disabled]
 USB Mass Storage Device Configuration
  Device Reset timeout   [20 sec]

                                            ><: Select Screen
                                            ↑↓: Select Item
                                            Enter: Select
                                            +/-: Change Opt.
                                            F1: General Help
                                            F2: Previous Values
                                            F9: Optimized Defaults
                                            F10: Save  ESC: Exit

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```

Parameter	Description	Option
Detected USB Devices	Displays the information of installed USB devices in the system.	
USB Controller	When enabled, the USB controller will function normally.	Enabled Disabled
Legacy USB Support	Enables or disables support for legacy USB devices.	Enabled Disabled
Port 60/64 Emulation	Enable I/O port 60h/64h emulation support. This should be enabled for the complete USB Keyboard Legacy support for non-USB aware OS.	Enabled Disabled
Device Reset Timeout	Define USB Mass Storage Device Start Unit command timeout.	10 sec 20sec 30 sec 40sec

Legacy Device Configuration

```
                            BIOS Setup Utility
        Advanced

Set Parameters of Serial Port 1 (COM1)          Enable or Disable
                                                Serial Port (COM)
Serial Port          [Enabled]
Device Settings      IO=3F8h; IRQ=4;

Change Settings      [Auto]

Set Parameters of Serial Port 2 (COM2)

Serial Port          [Enabled]
Device Settings      IO=2F8h; IRQ=3;              ><: Select Screen
                                                  ↑↓: Select Item
Change Settings      [Auto]                        Enter: Select
                                                  +/-: Change Opt.
                                                  F1: General Help
                                                  F2: Previous Values
                                                  F9: Optimized Defaults
                                                  F10: Save  ESC: Exit

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```

Parameter	Description	Option
Serial Port 1/2	When enabled allows you to configure the serial port settings. When set to Disabled, displays no configuration for the serial port.	Enabled Disabled
Device Setting	Displays Serial Port 1/2 device setting information	
Change Settings	Change Serial Port 1/2 device settings. When set to Auto allows the server's BIOS or OS to select a configuration.	Auto IO=3F8; IRQ=4 IO=3F8h; IRQ=3,4,5,6,7,10,11,12 IO=2F8h; IRQ=3,4,5,6,7,10,11,12 IO=3E8h; IRQ=3,4,5,6,7,10,11,12 IO=2E8h; IRQ=3,4,5,6,7,10,11,12

Console Redirection

Parameter	Description	Option
Console Redirection	Select whether to enable console redirection. Console redirection enables users to manage the system from a remote location.	Serial Port 1 Serial Port 2 Disabled
Terminal Type	Select a terminal type to be used for console redirection.	VT100 VT100+ ANSI VT-UTF8
Bits per second	Select the baud rate for console redirection.	9600 19200 57600 115200
Data Bits	Select the Data Bits.	7 8
Parity	A parity bit can be sent with the data bits to detect some transmission errors. Even: parity bi is 0 if the num of 1's in the data bits is even. Odd: parity bit is0if num of 1's the data bits is odd. Mark: parity bit is always 1. Space: Parity bit is always 0. Mark and Space Parity do not allow for error detection.	None Even Odd Mark Space
Stop Bits	Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.	1 2
Flow Control	Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.	None Hardware RTS/CTS
Recorder Mode	When this mode enabled, only text will be send. This is to capture	Enabled Disabled

	Terminal data.	
Resolution 100x31	Enables or disables extended terminal resolution.	Enabled Disabled
Legacy OS Redirection	On Legacy OS, the number of Rows and Columns supported redirection.	80x24 80X25

Power Configuration
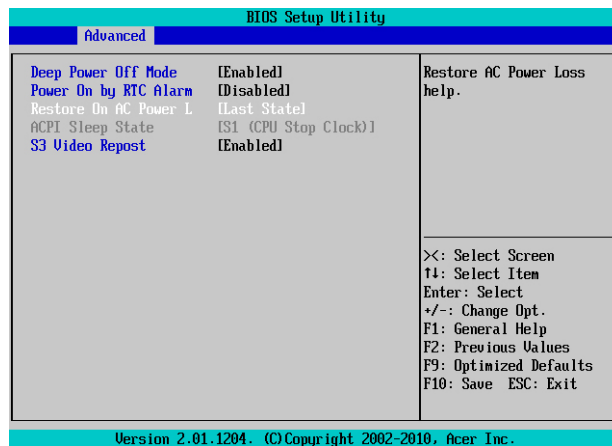
Parameter	Description	Option
Deep Power Off Mode	Enable or Disable Deep Power Off Mode.	Enabled Disabled
Power On by RTC Alarm	Select whether to wake up the system when an RTC alarm is detected.	Enabled Disabled
Restore on AC Loss	Defines the power state to resume to after a sys- tem shutdown that is due to an interruption in AC power. When set to Last State, the system will return to the active power state prior to shutdown. When set to Stay Off, the system remains off after power shutdown.	Last State Stay Off Power On
ACPI Sleep State	Displays ACPI Sleep State.	
S3 Video Report	Enable or Disable S3 Video Report.	Enabled Disabled

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Hardware Monitor

Press Enter to view the Hardware Monitor screen which displays a real-time record of the CPU/system temperature, fan speed, and voltage. Items on this window are non-configurable.

```
                        BIOS Setup Utility
        Advanced

  Pc Health Status

  System Temperature      : +37 C
  SR5670 Temperature      : +39 C
  CPU Temperature         : +46 C
  FRONT_FAN1 Speed        : N/A
  CPU_FAN1 Speed          : 3729 RPM
  REAR_FAN1 Speed         : 3110 RPM
  V_Core                  : +1.200 V
  V_1V8                   : +1.824 V
  V_1V5                   : +1.536 V          ><: Select Screen
  V_3V3                   : +3.376 V          ↑↓: Select Item
  V_12V                   : +11.877 V         Enter: Select
  V_5V                    : +5.024 V          +/-: Change Opt.
                                              F1: General Help
                                              F2: Previous Values
                                              F9: Optimized Defaults
                                              F10: Save  ESC: Exit


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```

Security Menu

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.

```
                        BIOS Setup Utility
   Main  Advanced  Security  Server Management  Boot Options          ▶

   Administrator Passwor   Not Installed      Turn TPM
   User Password Status    Not Installed      Enable/Disable. NOTE:
                                              Your Computer will
   Set Administrator Password                 reboot during restart
                                              in order to change
   Power Button Lockout    [Disabled]         State of TPM.
   TPM SUPPORT             [Enabled]
   TPM State               [Enabled]
   Pending TPM operation   [Enable Take Ownership]

   Current TPM Status Information
     TPM Enabled Status:   [Disabled]         ><: Select Screen
     TPM Active Status:    [Deactivated]      ↑↓: Select Item
     TPM Owner Status:     [UnOwned]          Enter: Select
                                              +/-: Change Opt.
   Chassis Opened Warnin   [Enabled]          F1: General Help
   Chassis Opened          YES                F2: Previous Values
                                              F9: Optimized Defaults
                                              F10: Save  ESC: Exit

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```

There are three types of passwords that you can set:

- Administrator password

  Entering this password will allow the user to access and change all settings in the Setup Utility.

- User password

  Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.

- Power-on boot

  When the Password on Boot field is enabled, a password will be required to boot up the server. To enable or disable this field, a Administrator Password must first be set.

Parameter	Description	Option
Administrator Password	This parameter indicates whether a Administrator Password has been assigned	Not Installed Enabled
User Password Status	This parameter indicates whether a user pass- word has been assigned.	Not Installed Enabled
Set Administrator Password	Press Enter to configure the Administrator password	
Set User Password	Press Enter to configure the user password.	
Power Button Lockout	Enable or disable Power Button Lockout	Enabled Disabled
TPM Support	Select Enabled to activate TPM support feature.	Enabled Disabled
TPM State	Select Enabled to activate TPM State function.	Enabled Disabled
Pending TPM Support	Schedule TPM operation.	None Enable Take Ownership
Chassis Open Warning	Enable or disable case open intrusion function.	Enabled Disabled

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Setting a System Password

1. Use the up/down keys to select a password parameter (Set Administrator Password or Set User Password), then press **Enter**.

   A password box will appear.

2. Type a password then press **Enter**.

   The password may consist of up to six alphanumeric characters (A-Z, a-z, 0-9).

3. Retype the password to verify the first entry then press **Enter** again.

4. Press **F10**.

5. Select **Yes** to save the new password and close the Setup Utility.

Changing a System Password

1. Use the up/down keys to select a password parameter (Set Administrator Password or Set User Password), then press **Enter**.

2. Type the original password then press **Enter**.

3. Type a new password then press **Enter**.

4. Retype the password to verify the first entry then press **Enter** again.

5. Press **F10**.

6. Select **Yes** to save the modified password and close the Setup Utility.

Removing a System Password

1. Use the up/down keys to select a password parameter (Set Administrator Password of Set User Password), then press **Enter**.

2. Enter the current password then press **Enter**.

3. Press Enter twice without entering anything in the new and confirm password fields.

   After doing this, the system automatically sets the related password parameter to **Clear**.

Server Menu


```
                    BIOS Setup Utility
   Main  Advanced  Security  Server Management  Boot Options        ▶

  ▶ System Information                    System Information
  ▶ Event Log Configuration




                                         ><: Select Screen
                                         ↑↓: Select Item
                                         Enter: Select
                                         +/-: Change Opt.
                                         F1: General Help
                                         F2: Previous Values
                                         F9: Optimized Defaults
                                         F10: Save  ESC: Exit

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```
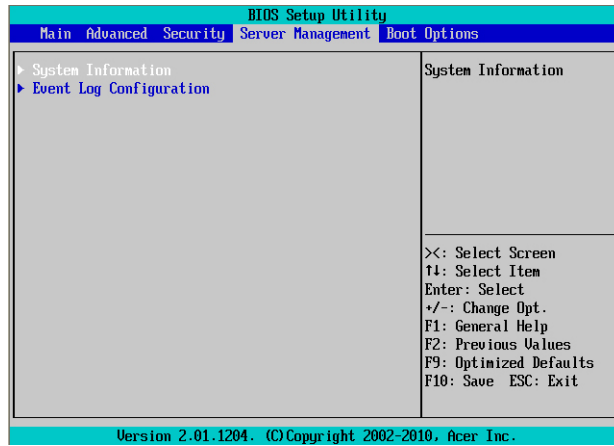
Parameter	Description	Option
System Information	Displays basic system ID information, as well as BIOS version. Press Enter to access the related submenu.	
Event Log Configuration	Displays Event Log advanced settings. Press Enter to access the related submenu.	

System Information

The System Management submenu is a simple display page for basic system ID information, as well as System product information. Items on this window are non-configurable.

```
                        BIOS Setup Utility
                       Server Management

  System Product Name    GT115 F1
  System Serial Number
  Base Board Product Na   GT115 F1
  Base Board Serial Num
  UUID                   C80DBCD25AB4DF11
                         96EB7C39FC455BE7

  NIC1 MAC Address       6C-F0-49-E4-5B-65_

                                             ><: Select Screen
                                             ↑↓: Select Item
                                             Enter: Select
                                             +/-: Change Opt.
                                             F1: General Help
                                             F2: Previous Values
                                             F9: Optimized Defaults
                                             F10: Save  ESC: Exit

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```

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Event Log Configuration
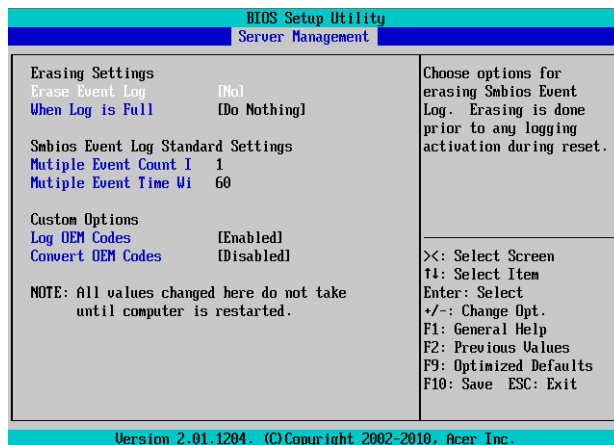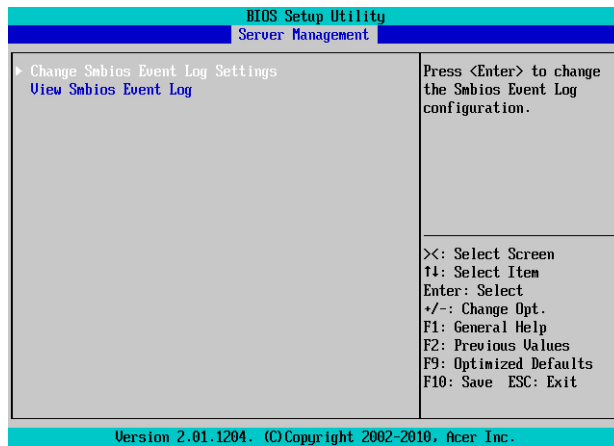
Parameter	Description	Option
Change Smbios Event Configuration	Press Enter to access the related submenu.	
View Smbios Event Log	Displays Smbios Event Log . Press Enter to View Smbios Event Log	
Erase Event Log	Choose options for erasing Smbios Event Log Erasing is done prior to any logging activation during reset.	No Yes, next reset Yes, every reset
When Log is Full	Choose options for reactions to a full Smbios Event Log.	Do Nothing Erase immediately
Log OEM Codes	Enable or Disable the logging of EFI Status Codes as OEM Codes.	Enabled Disabled
Convert OEM Codes	Enable or disable the converting of EFI Status Codes to Standard Smbios Types.	Enabled Disabled

NOTE: All values changed here do not take action until computer is restarted.

Boot Option Menu

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error message if the drive(s) specified is not bootable.


```
                        BIOS Setup Utility
   Main  Advanced  Security  Server Management  Boot Options            ▶

   Set Boot Priority                         Sets the system boot
   1st Boot              [Hard Disk]         order
   2nd Boot              [Optical Disk]
   3rd Boot              [Removable]
   4th Boot              [Network:IBA GE Slo...]
   5th Boot              [UEFI:Built-in EFI ...]

   ▶ Hard Disk Drive Priority
   ▶ Optical Disk Drive priority
   ▶ Removable Device Priority
   ▶ Network Device Priority               ><: Select Screen
   ▶ UEFI Boot Device Priority             ↑↓: Select Item
                                           Enter: Select
   Quiet Boot           [Enabled]          +/-: Change Opt.
   Bootup NumLock State [On]               F1: General Help
   POST Error Pause     [All, But Keyboard] F2: Previous Values
   Option ROM Messages  [Force BIOS]       F9: Optimized Defaults
                                           F10: Save  ESC: Exit

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```



```
                        BIOS Setup Utility
   Main  Advanced  Security  Server Management  Boot Options            ▶

   1st Boot              [Hard Disk]         Set Watch Dog Timeing
   2nd Boot              [Optical Disk]      Enable/Disable.
   3rd Boot              [Removable]
   4th Boot              [Network:IBA GE Slo...]
   5th Boot              [UEFI:Built-in EFI ...]

   ▶ Hard Disk Drive Priority
   ▶ Optical Disk Drive priority
   ▶ Removable Device Priority
   ▶ Network Device Priority
   ▶ UEFI Boot Device Priority             ><: Select Screen
                                           ↑↓: Select Item
   Quiet Boot           [Enabled]          Enter: Select
   Bootup NumLock State [On]               +/-: Change Opt.
   POST Error Pause     [All, But Keyboard] F1: General Help
   Option ROM Messages  [Force BIOS]       F2: Previous Values
                                           F9: Optimized Defaults
   Watch Dog Timer      [Disabled]         F10: Save  ESC: Exit

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```
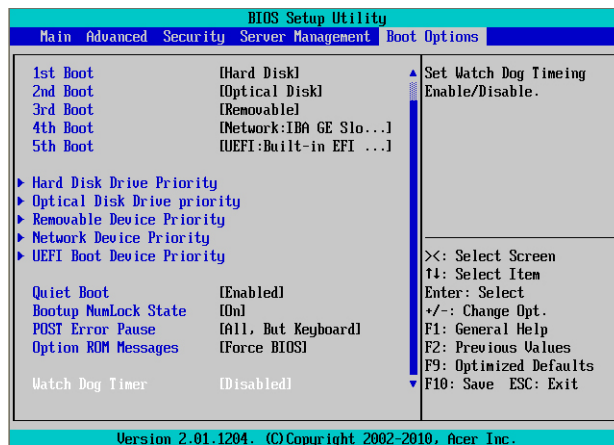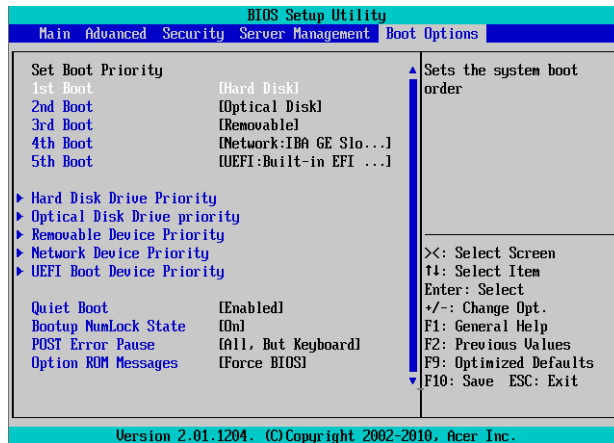
By default, the server searches for boot devices in the following order:

1. Hard drive

2. Optical disc drive

3. Removable device

4. Network device

5. UEFI device

Parameter	Description	Option
Hard Disk Drive Priority	Press Enter to configure the boot priority.	
Optical Disk Drive Priority	Press Enter to configure the boot priority.	
Removable Disk Drive Priority	Press Enter to configure the boot priority.	
Network Device Priority	Press Enter to configure the boot priority.	
UEFI Boot Device Priority	Press Enter to configure the boot priority.	
Quiet Boot		Enabled Disabled

Bootup NumLock State	Enable or Disable Bootup NumLock function.	On Off
POST Error Pause	Select whether to pause POST when a boot-up error is detected.	Disabled All, But Keyboard All Errors
Option ROM Messages	Set display mode for Option ROM.	Force BIOS Keep Current
Watch Dog Timer	Enable or disable Watch Dog Timing function.	Enabled Disabled

Boot Manager Menu

The Boot manager menu allows you to specify the boot-up drive. BIOS setup will display an error message if the drive(s) specified is not bootable.

```
                          BIOS Setup Utility
◄ Boot Manager  Exit

   Boot Override
   Built-in EFI Shell
   IBA GE Slot 0100 v1350
   IBA GE Slot 0200 v1350

                                        ╳<: Select Screen
                                        ↑↓: Select Item
                                        Enter: Select
                                        +/-: Change Opt.
                                        F1: General Help
                                        F2: Previous Values
                                        F9: Optimized Defaults
                                        F10: Save  ESC: Exit

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```
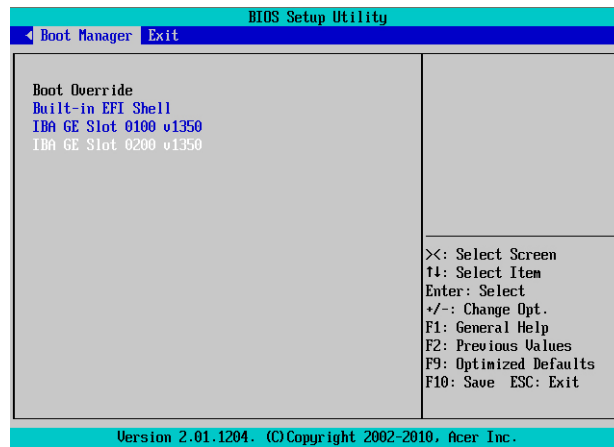
Parameter	Description	Option
Built-in EFI Shell	Press Enter to configure the device as the boot-up drive.	
IBA GE Slot 0100 v1350	Press Enter to configure the device as the boot-up drive.	
IBA GE Slot 0200 v1350	Press Enter to configure the device as the boot-up drive.	

Exit Menu

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press **Enter**.

```
                          BIOS Setup Utility
  ◄ Boot Manager   Exit

  Save Changes and Exit                   Exit system setup after
  Discard Changes and Exit                saving the changes.
  Save Changes
  Discard Changes
  Load Default Values
  Save as User Default Values
  Load User Default Values

                                          ><: Select Screen
                                          ↑↓: Select Item
                                          Enter: Select
                                          +/-: Change Opt.
                                          F1: General Help
                                          F2: Previous Values
                                          F9: Optimized Defaults
                                          F10: Save  ESC: Exit

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```

Parameter	Description	Option
Save Changes and Exit	Saves changes made and close the BIOS setup.	Enabled Disabled
Discard Changes and Exit	Discards changes made and close the BIOS setup.	Enabled Disabled
Save Changes	Saves changes made in the BIOS setup.	Enabled Disabled
Discard Changes	Discards all changes made in the BIOS setup	Enabled Disabled
Load Default Values	Loads the default settings for all BIOS setup parameters. Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly.	Enabled Disabled
Save as User Default Values	Saves as user default and close the BIOS setup.	Enabled Disabled
Load User Default Values	Loads the user default settings for all BIOS setup parameters.	Enabled Disabled

Troubleshooting

Error Symptoms List

NOTE: To diagnose a problem, first find the error symptom in the left column. If directed to a check procedure, replace the FRU indicated in the check procedure. If no check procedure is indicated, the first Action/FRU listed in right column is the most likely cause.

Error Symptom	Action/FRU
Processor / Processor Fan	
NOTE: Normally, the processor fan should be operative, and the processor clock setting should be exactly set to match its speed requirement before diagnosing any processor problems.	
Processor fan does not run but power supply fan runs.	1. Ensure the system is not in power saving mode. 2. With the system power on, measure the voltage of processor fan connector. Its reading should be +12Vdc. Its reading should be +12Vdc. If the reading shows normal, but the fan still does not work, then replace a good fan. 3. Main board.
Processor test failed.	1. Processor. 2. Main board.
Main board and Memory	
NOTE: Ensure the memory modules are installed properly and the contact leads are clean before diagnosing any system problems.	
Memory test failed.	1. See "Memory" 2. Main board
Incorrect memory size shown or repeated during POST.	1. Insert the memory modules in the DIMM sockets properly, then reboot the system. 2. Memory module. 3. Main board.
System works but fails to enter power saving mode when the Power Management Mode is set to Enabled.	1. Enter BIOS Setup and load default settings. 2. Reload software from Recovery CD.
Blinking cursor only; system does not work.	1. Diskette/IDE drive connection/cables 2. Diskette/IDE disk drives 3. See "Undetermined Problems". 4. Main board
Hard Disk Drive	
NOTE: Ensure hard disk drive is configured correctly in BIOS Setup, cable/jumper are set correctly before diagnosing any hard disk drive problems. (If only one drive is installed, please make sure the drive is connected to master connector or the drive is set to master.)	
Hard disk drive test failed.	1. Enter BIOS Setup and Load default settings. 2. Hard disk drive cable. 3. Hard disk drive. 4. Main board.
Hard disk drive cannot format completely.	1. Enter BIOS Setup and Load default settings. 2. Hard disk drive cable. 3. Hard disk drive.

	4. Main board.
Hard disk drive has write error.	1. Enter BIOS Setup and Load default settings. 2. Hard disk drive.
Hard disk drive LED fails to light, but system operates normally.	1. With the system power on, measure the voltage of hard disk LED connector. 2. Hard drive LED cable.

CD/DVD-ROM Drive	
NOTE: Ensure CD/DVD-ROM drive is configured correctly in BIOS Setup, cable/jumper are set correctly and its laser beam is clean before diagnosing any CD/DVD-ROM drive problems.	
CD/DVD-ROM drive LED doesn't come on but works normally.	1. CD/DVD-ROM drive
CD/DVD-ROM drive LED flashes for more than 30 seconds before LED shutting off. Software asks to reinstall disc. Software displays a reading CD/DVD error.	1. CD/DVD-ROM may have dirt or foreign material on it. Check with a known good disc. 2. CD/DVD-ROM is not inserted properly. 3. CD/DVD-ROM is damaged.
CD/DVD-ROM drive cannot load or eject when the system is turned on and its eject button is pressed and held.	1. Disconnect all cables from CD/DVD-ROM drive except power cable, then press eject button to try to unload the disk. 2. CD/DVD-ROM drive power. 3. CD/DVD-ROM drive
CD/DVD-ROM drive does not read and there are no messages are displayed.	1. CD may have dirt or foreign material on it. Check with a known good disc. 2. Ensure the CD/DVD-ROM driver is installed properly. 3. CD/DVD-ROM drive.
CD/DVD-ROM drive can play audio CD but no sound output.	1. Ensure the headphone jack of the CD/DVD-ROM has an output. 2. Turn up the sound volume. 3. Speaker power/connection/cable. 4. CD/DVD-ROM drive.

Video and Monitor	
Video memory test failed. Video adapter failed.	1. Remove all non-factory-installed cards. 2. Load default settings (if screen is readable). 3. Main board.
Display problem: - Incorrect colors No high intensity Missing, broken, or incorrect characters Blank monitor (dark) Blank monitor (bright) Distorted image Unreadable monitor Other monitor problems	1. Monitor signal connection/cable. 2. Monitor 3. Video adapter card 4. Main board
Display changing colors.	1. Monitor signal connection/cable 2. Monitor 3. Main board
Display problem not listed above	1. "Monitor"

| (including blank or illegible monitor). | 2. Load default settings (if screen is readable). |
| | 3. Main board |

Parallel/Serial Ports	
Execute "Load BIOS Default Settings" in BIOS Setup to confirm ports presence before diagnosing any parallel/serial ports problems.	
Serial or parallel port loop-back test failed.	1. Make sure that the LPT# or COM# you test is the same as the setting in BIOS Setup. 2. Loop-back. 3. Main board.
Printing failed.	1. Ensure the printer driver is properly installed. Refer to the printer service manual. 2. Printer. 3. Printer cable. 4. Main board.
Printer problems.	1. Refer to the service manual for the printer.

Keyboard	
Some or all keys on keyboard do not work.	1. Keyboard

Power Supply	
Pressing power switch does not turn off system. (Only unplugging the power cord from electrical outlet can turn off the system.)	1. Ensure the AC-LINK in BIOS Setup of Boot Configuration is not set to Stay-off. 2. Power switch cable assembly
Pressing power switch does not turn on the system.	1. Ensure the power override switch (situated at the back of the machine, just above the connector for the power cable) is not set to OFF. 2. Power switch cable assembly.
Executing software shutdown from Windows98 Start menu does not turn off the system. (Only pressing power switch can turn off the system).	1. Load default settings. 2. Reload software from Recovery CD.
No system power, or power supply fan is not running.	1. Power Supply 2. Main board

Other Problems	
Any other problems.	1. Undetermined Problems

BIOS Beep Codes

BIOS Beep Codes Table
PEI Beep Codes

# of Beeps	Description
1	Memory not Installed.
1	Memory was installed twice (InstallPeiMemory routine in PEI Core called twice)
2	Recovery started
3	DXEIPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

DXE Beep Codes

# of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met

BIOS Recovery Instruction

AMI has an embedded recovery technique. In the event that the BIOS becomes corrupt the boot block can be used to restore the BIOS to a working state. To restore your BIOS, please follow the instructions listed below:

Recovery Instruction:

1   Prepare a bootable handy drive or floppy diskette

2   Copy the image file to the bootable hand drive or the bootable floppy diskette.
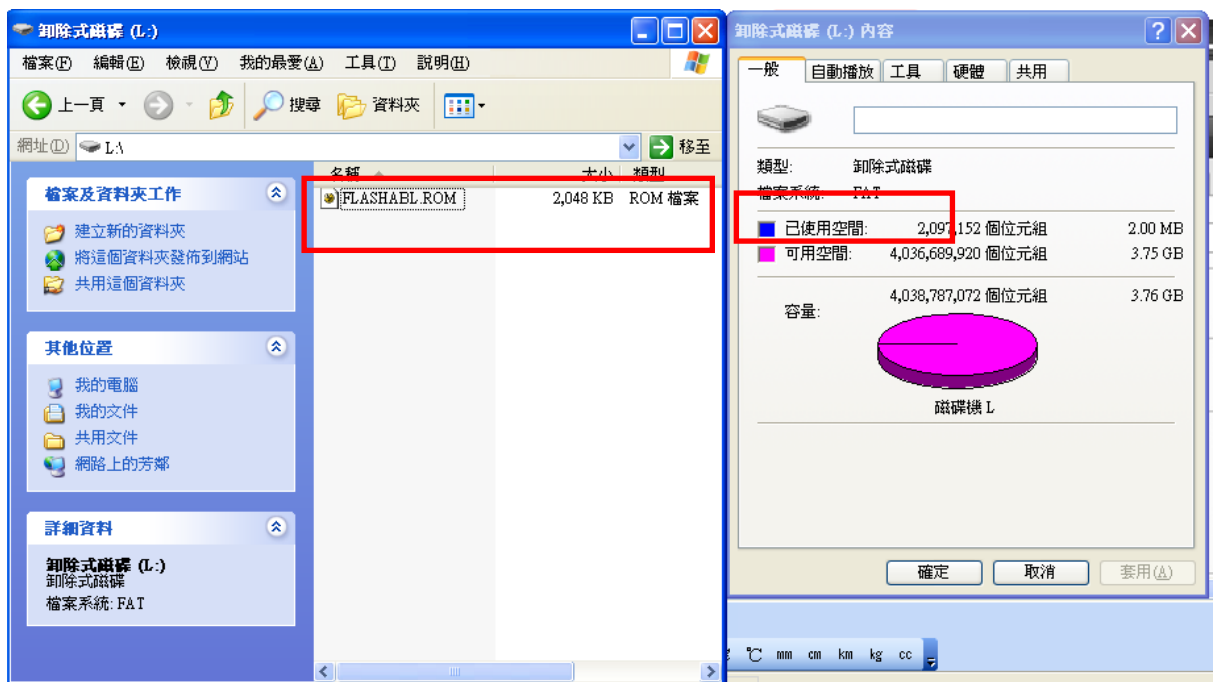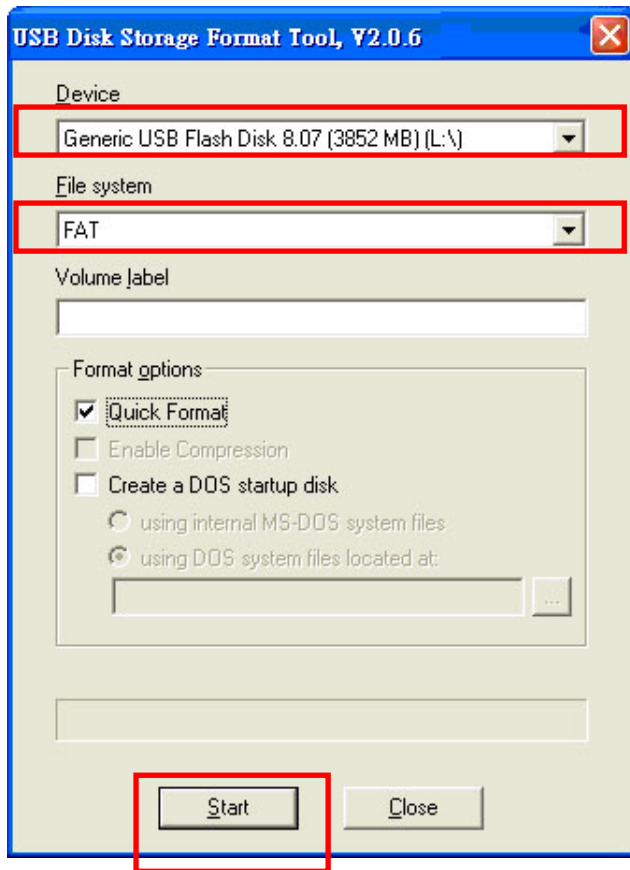
3   Rename the image file to "FLASHABL.ROM".

Figure 300-03

Recovery Stage

4   Connect the disk, here we use FAT disk and set recovery jumper. Then system would enter BIOS Setup Menu. You may see the page as the following figures shows.

5   Enter "Proceed with flash update" page, the system would recover the BIOS image automically.

6   When recovery process is completed, reset the system.

BIOS POST Error Messages List

BIOS POST error message list
PEI Phase

Status Code	Description
Progress Code	
0x10	PEI Core is started
0x11	Pre-memory CPU initialization is started
0x12	Pre-memory CPU initialization (CPU module specific)
0x13	Pre-memory CPU initialization (CPU module specific)
0x14	Pre-memory CPU initialization (CPU module specific)
0x15	Pre-memory North Bridge initialization is started
0x16	Pre-Memory North Bridge initialization (North Bridge module specific)
0x17	Pre-Memory North Bridge initialization (North Bridge module specific)
0x18	Pre-Memory North Bridge initialization (North Bridge module specific)
0x19	Pre-memory South Bridge initialization is started
0x1A	Pre-memory South Bridge initialization (South Bridge module specific)
0x1B	Pre-memory South Bridge initialization (South Bridge module specific)
0x1C	Pre-memory South Bridge initialization (South Bridge module specific)
0x1D – 0x2A	OEM pre-memory initialization codes
0x2B	Memory initialization.　Serial Presence Detect (SPD) data reading
0x2C	Memory initialization.　Memory presence detection
0x2D	Memory initialization.　Programming memory timing information
0x2E	Memory initialization.　Configuring memory
0x2F	Memory initialization (other).
0x30	Reserved for ASL (see ASL Status Codes section below)
0x31	Memory Installed
0x32	CPU post-memory initialization is started
0x33	CPU post-memory initialization.　Cache initialization
0x34	CPU post-memory initialization.　Application Processor(s) (AP) initialization
0x35	CPU post-memory initialization.　Boot Strap Processor (BSP) selection
0x36	CPU post-memory initialization.　System Management Mode (SMM) initialization
0x37	Post-Memory North Bridge initialization is started
0x38	Post-Memory North Bridge initialization (North Bridge module specific)
0x39	Post-Memory North Bridge initialization (North Bridge module specific)
0x3A	Post-Memory North Bridge initialization (North Bridge module specific)
0x3B	Post-Memory South Bridge initialization is started
0x3C	Post-Memory South Bridge initialization (South Bridge module specific)
0x3D	Post-Memory South Bridge initialization (South Bridge module specific)
0x3E	Post-Memory South Bridge initialization (South Bridge module specific)
0x3F-0x4E	OEM post memory initialization codes
0x4F	DXE IPL is started
PEI Error Codes	
0x50	Memory initialization error.　Invalid memory type or incompatible memory speed
0x51	Memory initialization error.　SPD reading has failed
0x52	Memory initialization error.　Invalid memory size or memory modules do not match.
0x53	Memory initialization error.　No usable memory detected
0x54	Unspecified memory initialization error.
0x55	Memory not installed
0x56	Invalid CPU type or Speed
0x57	CPU mismatch
0x58	CPU self test failed or possible CPU cache error
0x59	CPU micro-code is not found or micro-code update is failed

0x5A	Internal CPU error
0x5B	Reset PPI is not available
0x5C-0x5F	Reserved for future AMI error codes
S3 Resume Progress Codes	
0xE1=0	S3 Resume is stared (S3 Resume PPI is called by the DXE IPL)
0xE1	S3 Boot Script execution
0xE2	Video repost
0xE3	OS S3 wake vector call
0xE4-0xE7	Reserved for future AMI progress codes
S3 Resume Error Codes	
0xE8	S3 Resume Failed
0xE9	S3 Resume PPI not Found
0xEA	S3 Resume Boot Script Error
0xEB	S3 OS Wake Error
0xEC-0xEF	Reserved for future AMI error codes
Recovery Progress Codes	
0xF0	Recovery condition triggered by firmware (Auto recovery)
0xF1	Recovery condition triggered by user (Forced recovery)
0xF2	Recovery process started
0xF3	Recovery firmware image is found
0xF4	Recovery firmware image is loaded
0xF5-0xF7	Reserved for future AMI progress codes
Recovery Error Codes	
0xF8	Recovery PPI is not available
0xF9	Recovery capsule is not found
0xFA	Invalid recovery capsule
0xFB – 0xFF	Reserved for future AMI error codes

DXE Phase

Status Code	Description
0x60	DXE Core is started
0x61	NVRAM initialization
0x62	Installation of the South Bridge Runtime Services
0x63	CPU DXE initialization is started
0x64	CPU DXE initialization (CPU module specific)
0x65	CPU DXE initialization (CPU module specific)
0x66	CPU DXE initialization (CPU module specific)
0x67	CPU DXE initialization (CPU module specific)
0x68	PCI host bridge initialization
0x69	North Bridge DXE initialization is started
0x6A	North Bridge DXE SMM initialization is started
0x6B	North Bridge DXE initialization (North Bridge module specific)
0x6C	North Bridge DXE initialization (North Bridge module specific)
0x6D	North Bridge DXE initialization (North Bridge module specific)
0x6E	North Bridge DXE initialization (North Bridge module specific)
0x6F	North Bridge DXE initialization (North Bridge module specific)
0x70	South Bridge DXE initialization is started
0x71	South Bridge DXE SMM initialization is started
0x72	South Bridge devices initialization
0x73	South Bridge DXE Initialization (South Bridge module specific)
0x74	South Bridge DXE Initialization (South Bridge module specific)
0x75	South Bridge DXE Initialization (South Bridge module specific)
0x76	South Bridge DXE Initialization (South Bridge module specific)
0x77	South Bridge DXE Initialization (South Bridge module specific)
0x78	ACPI module initialization
0x79	CSM initialization

0x7A – 0x7F	Reserved for future AMI DXE codes
0x80 – 0x8F	OEM DXE initialization codes
0x90	Boot Device Selection (BDS) phase is started
0x91	Driver connecting is started
0x92	PCI Bus initialization is started
0x93	PCI Bus Hot Plug Controller Initialization
0x94	PCI Bus Enumeration
0x95	PCI Bus Request Resources
0x96	PCI Bus Assign Resources
0x97	Console Output devices connect
0x98	Console input devices connect
0x99	Super IO Initialization
0x9A	USB initialization is started
0x9B	USB Reset
0x9C	USB Detect
0x9D	USB Enable
0x9E – 0x9F	Reserved for future AMI codes
0xA0	IDE initialization is started
0xA1	IDE Reset
0xA2	IDE Detect
0xA3	IDE Enable
0xA4	SCSI initialization is started
0xA5	SCSI Reset
0xA6	SCSI Detect
0xA7	SCSI Enable
0xA8	Setup Verifying Password
0xA9	Start of Setup
0xAA	Reserved for ASL (see ASL Status Codes section below)
0xAB	Setup Input Wait
0xAC	Reserved for ASL (see ASL Status Codes section below)
0xAD	Ready To Boot event
0xAE	Legacy Boot event
0xAF	Exit Boot Services event
0xB0	Runtime Set Virtual Address MAP Begin
0xB1	Runtime Set Virtual Address MAP End
0xB2	Legacy Option ROM Initialization
0xB3	System Reset
0xB4	USB hot plug
0xB5	PCI bus hot plug
0xB6	Clean-up of NVRAM
0xB7	Configuration Reset (reset of NVRAM settings)
0xB8 – 0xBF	Reserved for future AMI codes
0xC0 – 0xCF	OEM BDS initialization codes
DXE Error Codes	
0xD0	CPU initialization error
0xD1	North Bridge initialization error
0xD2	South Bridge initialization error
0xD3	Some of the Architectural Protocols are not available
0xD4	PCI resource allocation error. Out of Resources
0xD5	No Space for Legacy Option ROM
0xD6	No Console Output Devices are found
0xD7	No Console Input Devices are found
0xD8	Invalid password
0xD9	Error loading Boot Option (LoadImage returned error)
0xDA	Boot Option is failed (StartImage returned error)
0xDB	Flash update is failed
0xDC	Reset protocol is not available

Undetermined Problems

If an error message is present, go to "POST Error Messages List" on page 64. If you did not receive any messages, if the symptom is listed in "or "Error Symptoms List" on page 60. If you still cannot solve the problem, continue with this check:

1. Check the power supply voltages. If the voltages are correct continue with the following steps:
2. Power off the system unit.
3. Perform the following checks, one by one, until you have isolated the problem FRU.
4. Load default settings in setup.
5. Check all main board jumper positions and switch settings.
6. Check all adapter card jumper positions.
7. Check all device jumper positions.
8. Check all cables and connectors for proper installation.
9. If the jumpers, switches and voltage settings are correct, remove or disconnect the following, one at a time:
10. Non-Acer devices

   - External devices
   - Any adapter card (modem card, LAN card or video card, if installed)
   - CD/DVD-ROM drive
   - Diskette drive
   - Hard disk drive
   - DIMM
   - Processor
   - Main board

11. Power on the system unit.
12. Repeat steps 2 through 5 until you find the failing device or adapter.